

REMARKS/ARGUMENTS

In the drawings, Figure 3 was objected to because "USUABLE" in step 54 was misspelled. In amended Figure 3, the previously misspelled word in step 54 has been corrected.

In the specification, the paragraphs at page 7, lines 5 through 9; page 9, lines 11 through 25; page 9, line 25 through page 10, line 1; and page 10, line 26 through page 11, line 6 have been amended to correct minor editorial problems. Specifically, on page 7, line 9 multiplexing was misspelled, reference characters "50," "52," and "56" were added to the description, on page 10, line 32 "C2 than" was changed to "C2 then" pursuant to the Examiner's comments, and on page 10, line 33 a comma was inserted after the word "generated" pursuant to the Examiner's comments..

Claims 1-8, 10-18, 20-26, 30-31, 35-37, and 40-41 have been amended to change "sub-carrier frequencies of the symbols" to "sub-carrier frequencies" for improved readability. Similarly, claims 1, 10, 11, 21, 31, 35, 37, 40, 42, and 46 have been amended to change "communication device indicative of" to "communication device wherein the data is indicative of" for clarification. In addition, claim 46 has been amended to change "include" to "includes" as requested by the Examiner.

The Applicant acknowledges the receipt of the Office Action mailed July 22, 2004. Claims 1-49 were rejected. By this amendment, claims 32-34, 38-39, 43-45 and 47-49 were cancelled. Reconsideration and allowance of claims 1-31, 35-37, 40-42, and 46 as amended, is respectfully requested. Accordingly, amended claims and supporting remarks are hereby presented to more particularly point out and distinctly claim the subject matter that Applicant regards as his invention. No new matter is being added.

I. Rejection of claims 31, 37, and 43 under 35 U.S.C. 102(b)

Claims 31, 37, and 43 stand rejected under 35 U.S.C. 102(b) as allegedly being

anticipated by Williamson et al. (U.S. Pat. No. 5,991,269).

Williamson et al. is directed to a method of operating a wireline communication resource, such as a modem, supporting a multi-carrier transmission scheme. The method measures the differential and common mode signal-to-noise ratios of the wired line at various carrier frequencies to determine which carriers are suitable for transmission. Any sub-carrier channel that fails to provide a predetermined level of balance, i.e., an adequate signal-to-noise ratio, is de-selected by the modem and not used for traffic. Furthermore, in performing this method, Williamson et al. sends training sequences from one modem to another modem, for each sub-channel the receiving modem determines the common mode and differential mode transmission mode characteristics, or in other words, the receiving modem determines whether the training sequences were received acceptably. In contrast, claims 31, 37 and 42 recite that the first transmitter determines suitable sub-carrier frequencies and transmits data indicative of the sub-carrier frequencies suitable for communication with the first communication device.

In addition to the reasons just set forth, independent claims 31, 37 and 42 have been amended to more particularly point out and distinctly claim the subject matter that Applicant regards as his invention. Claim 31 as now amended recites that the determination of suitable sub-carrier frequencies for communication at a first communication device is performed through testing for interference by sampling a radio frequency channel. Similarly, claim 37 as now amended recites a means for determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel. Claim 42 as now amended recites a first signal processor for determining at the first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel.

Williamson et al. fails to disclose or suggest determining suitable sub-carrier

frequencies through testing for interference by sampling a radio frequency channel. Williamson et al. tests a wireline communication or wired resource rather than a wireless medium, i.e., a radio frequency channel, as required by amended claims 31 and 37. Furthermore, Williamson et al. measures the differential and common mode signal-to-noise ratios of a wired communication resource rather than sampling a radio frequency channel for interference as required by amended claims 31 and 37. Thus, claims 31, 37 and 42 as amended are not anticipated by or obvious in light of Williamson et al.

Claim 43, which depended from claim 42 has been canceled.

Therefore, reconsideration and allowance of claims 31 and 37 is respectfully requested.

II. Rejection of claims 31, 37, and 43 under 35 U.S.C. 102(e)

Claims 31, 37, and 43 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Hashem et al. (U.S. Pat. No. 6,721,569).

Hashem et al. is directed to a method for selecting sub-carriers to be used for data communications. According to the method, a signal generator within a base station generates a signal that is transmitted. Each sub-carrier in the signal carries data encoded with a "Link Mode." A "Link Mode" includes at least one transmission parameter, such as modulation level, a coding rate, a symbol rate, a transmission power level, antenna directional parameters, or space time coding parameters. The signal is received and processed by a remote unit. A processor within the remote unit performs a Fast Fourier Transform, separating the signal into sub-carrier signals. A decoder within the remote unit decodes the sub-carrier signals using a Link Mode appropriate for each sub-carrier. Also within the remote unit, an analysis processor measures the signal to interference ratio of each sub-carrier frequency. The analysis processor further compares the signal to interference ratio for each sub-carrier frequency with a threshold to determine which sub-carriers are acceptable for data

communications.

Claim 31 as amended recites that the determination of suitable sub-carrier frequencies for communication at a first communication device is performed through testing for interference by sampling a radio frequency channel. Claim 37 as amended recites a means for determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel. Claim 42 as amended recites a first communication processor for determining at the first device sub-carrier frequencies suitable for communications with the first communication device through testing for interference by sampling a radio frequency channel.

Hashem et al. fails to disclose or suggest determining suitable sub-carrier frequencies through testing for interference by sampling a radio frequency channel. Rather, Hashen et al. determines acceptable sub-carrier frequencies through transmitting a signal containing a Link Mode for each sub-carrier frequency to a receiver. At the receiver, the signal is then processed and decoded, and the signal to interference ratio for each sub-carrier frequency is used to determine which sub-carriers are acceptable for data communications. Applicant's invention as claimed does not require a transmission to select sub-carrier frequencies nor does Applicant's invention as claimed use a Link Mode. Applicant's invention as claimed also does not use the signal to interference ratio to determine which sub-carriers are acceptable for data communications. Rather, claims 31 and 37 as amended require determining suitable sub-carrier frequencies through testing for interference by sampling a radio frequency channel. Thus, claims 31, 37 and 42 are not anticipated by or obvious in light of Hashem et al.

Claim 43 has been canceled.

III. Rejection of claims 1, 2, 7-11, 12, 17-22, and 27-48 under 35 U.S.C. 102(e)

Claims 1, 2, 7-11, 12, 17-22, and 27-48 stand rejected under 35 U.S.C. 102(e) as

allegedly being anticipated by Li et al. (U.S. Pub, No. 2002/0119781).

Li et al. is directed to a method of subcarrier selection. In accordance with the method, a subscriber measures channel and interference information for subcarriers "based on pilot symbols received from a base station." The pilot symbols are known to both the base station and the subscribers (see paragraph 0038). More specifically, the subscriber first measures the channel and interference information for all the subcarriers and then selects multiple subcarriers with good performance and feeds back the information on these candidate subcarriers to the base station. Good performance is based a high signal-to-interference plus noise ratio.

Both the base station and the subscriber know the pilot symbols. For example, a pilot symbol may cover the entire frequency bandwidth. Furthermore, the pilot symbols may be different for different cells or sectors. The pilot symbols are typically used for time and frequency synchronization, channel estimation, and signal-to-interference/noise ratio measurement for cluster allocation.

By contrast, claim 1 as now amended recites determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel and determining at a second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel. Claim 11 as now amended recites means for determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel and means for determining at a second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel. Claim 21 as now amended recites that the first receiver and the first processor are configured for determining sub-carrier frequencies

suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel and that the second receiver and the second processor are configured for determining sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel. Claim 31 as now amended recites determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel. Claim 35 as now amended recites determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel. Claim 37 as now amended recites means for determining at a first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel. Claim 40 as amended recites means for determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel. Claim 42 as amended recites a first signal processor for determining at the first communication device sub-carrier frequencies suitable for communication with the first communication device through testing for interference by sampling a radio frequency channel. Claim 46 as amended recites a second signal processor for determining at the second communication device sub-carrier frequencies suitable for communication with the second communication device through testing for interference by sampling a radio frequency channel. Thus, claims 1, 11, 21, 31, 35, 37, 40, 42, and 46 have all been amended such that determining sub-carrier frequencies suitable for communication with either the first and/or second communication devices includes the limitation of testing for interference by sampling a radio frequency channel.

Li et al. fails to disclose or suggest determining sub-carrier frequencies suitable for

communication through testing for interference by sampling a radio frequency channel. Rather, Li et al. measures channel and interference information for subcarriers based on pilot symbols and selects multiple subcarriers based on a signal-to-interference plus noise ratio. Therefore, claims 1, 11, 21, 31, 35, 37, 40, 42, and 46 as amended are not anticipated by or obvious in light of Li et al.

Claims 2 and 7-10 are dependent claims, depending from claim 1 and therefore contain each and every element of claim 1. Therefore, for reasons already set forth for claim 1, claims 2 and 7-10 are also allowable. Similarly, claims 12 and 17-20 are dependent claims, depending from claim 11 and therefore contain each and every element of claim 11. Therefore, for the reasons set forth for claim 11, claims 12 and 17-20 are also allowable. Likewise, claims 22 and 27-30 are dependent claims, depending from claim 21 and therefore contain each and every element of claim 21. Therefore, for the reasons set forth for claim 21, claims 22 and 27-30 are also allowable. Claims 32-34 have been canceled without prejudice as will be described hereinafter. In addition, claim 36 is a dependent claim, depending from claim 35 and therefore contains each and every element of claim 35. Therefore, for the reasons set forth for claim 35, claim 36 is also allowable. Claims 38-39 have been canceled without prejudice as will be described hereinafter. Claim 41 is a dependent claim, depending from claim 40 and therefore contains each and every element of claim 40. Therefore, for the reasons set forth for claim 40, claim 41 is also allowable. Claims 43-45 and claims 47-48 have been canceled without prejudice as will be described hereinafter.

Reconsideration and allowance of claims 1, 11, 21, 31, 35, 37, 40, 42, and 46, as well as claims 2 and 7-10, 12, 17-20, 22, 27-30, 36, and 41 which depend therefrom, are therefore respectfully requested.

IV. Rejection of claims 3, 4, 13, 14, 23, and 24 under 35 U.S.C. 103(a)

Claims 3, 4, 13, 14, 23, and 24 stand rejected under 35 U.S.C. 103(a) as being under

patentable over Li et al. in view of Hashem et al.

Claims 3 and 4 are directly dependent from claim 1, and therefore contain each and every element of claim 1. Claims 13 and 14 are directly dependent from claim 11, and therefore contain each and every element of claim 11. Claims 23 and 24 are directly dependent from claim 21, and therefore contain each and every element of claim 21. Thus, for reasons already set forth hereinbefore for claims 1, 11 and 21, claims 3, 4, 13, 14, 23 and 24 should also be in condition for allowance over the cited prior art.

V. Rejection of claims 5, 6, 15, 16, 25, and 26 under 35 U.S.C. 103(a)

Claims 5, 6, 15, 16, 25, and 26 stand rejected under 35 U.S.C. 103(a) as being under patentable over Li et al. Claims 5 and 6 are directly dependent from claim 1, and therefore contain each and every element of claim 1. Claims 15 and 16 are directly dependent from claim 11, and therefore contain each and every element of claim 11. Claims 25 and 26 are directly dependent from claim 21, and therefore contain each and every element of claim 21. Therefore, for reasons already set forth for claims 1, 11 and 21, claims 5, 6, 15, 16, 25 and 26 should be patentable over the cited prior art.

VI. Double patenting advisement concerning claims 1, 2, 10-12, 21, 22, 30, 32-34, 38-39, 43-45, and 47-49

Applicant was advised that should claims 1, 2, and 10 be found allowable, claims 32-34 would be objected to under 37 CFR 1.75 as being a substantial duplicates thereof. Accordingly, Applicant has canceled claims 32-34 without prejudice to overcome any double patenting objection as being substantial duplicates of claims 1, 2, and 10.

Applicant was also advised that should claims 11 and 12 be found allowable, claims 38 and 39 would be objected to under 37 CFR 1.75 as being a substantial duplicates thereof. Therefore, Applicant has canceled claims 38 and 39 without prejudice to overcome any

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double patenting objection as being substantial duplicates of claims 11 and 12.

In addition, Applicant was advised that should claims 21, 22, and 30 be found allowable, claims 43-45 and 47-49 would be objected to under 37 CFR 1.75 as being a substantial duplicates thereof. Accordingly, Applicant has canceled claims 43-45 and 47-49 without prejudice to overcome any double patenting objection as being substantial duplicates of claims 21, 22, and 30.

CONCLUSION

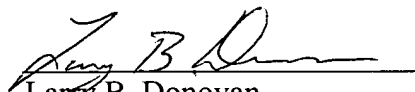
Applicant respectfully submits that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending claims are therefore respectfully requested. If the Examiner believes there are any further matters that need to be discussed in order to expedite the prosecution of the present application, the Examiner is invited to contact the undersigned.

If there are any other fees necessitated by the foregoing communication, please charge such fees to our Deposit Account No. 50-0902, referencing our Docket No. (72255/05459).

Respectfully submitted,

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Amendments to the Drawings:

The attached sheet of drawings includes changes to FIG. 3. This sheet, which includes FIG. 3 replaces the original sheet including FIG. 3.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

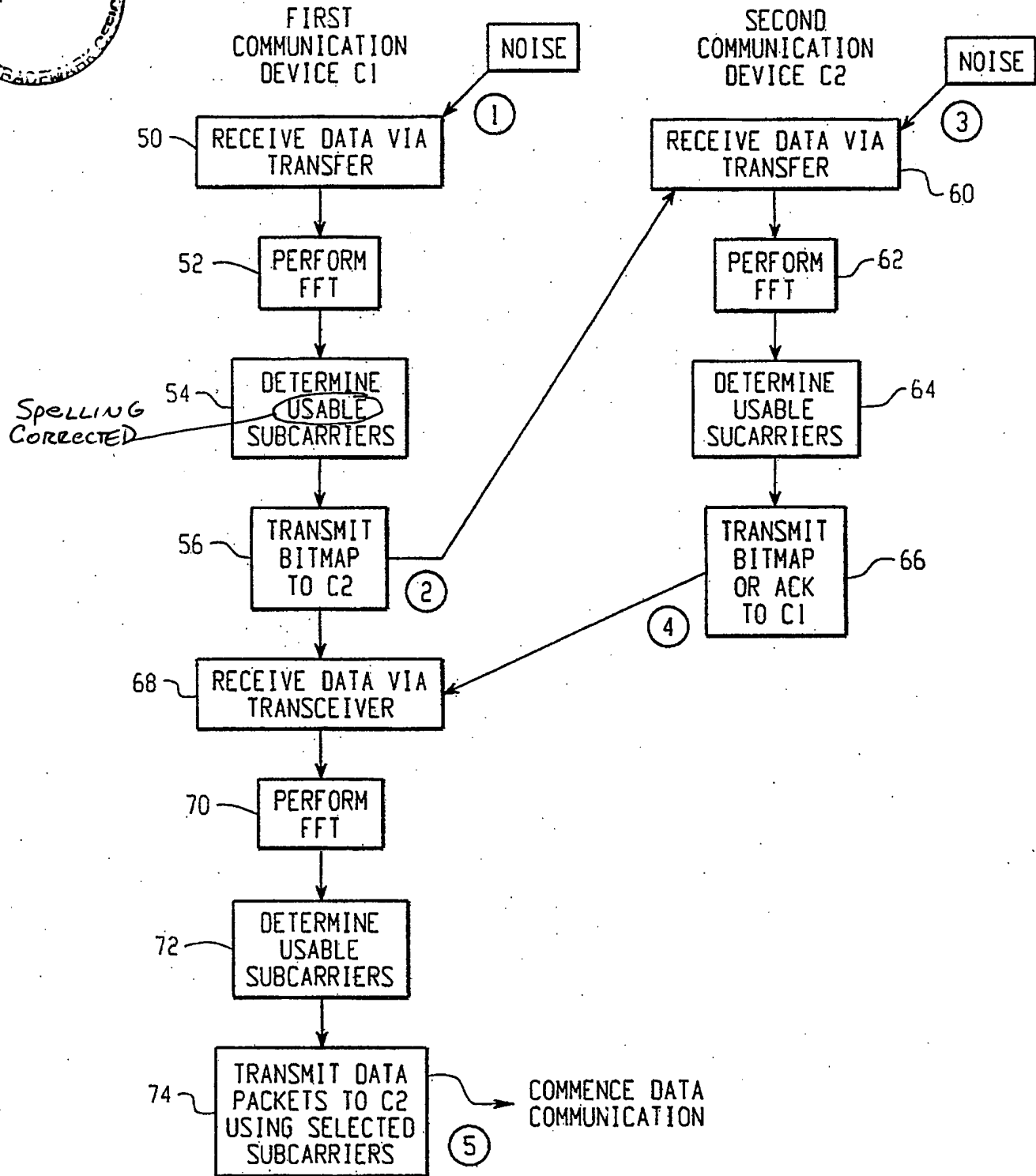


Fig. 3